

What is claimed is:

1. An implantable medical device comprising:

a thin-walled tubular member having a plurality of openings and at least one elongated polymer strand woven through said openings wherein said elongated polymer strand has incorporated therein or thereon at least one therapeutic agent for release into tissue adjacent said elongated polymer strand when said implantable medical device is implanted into a vessel.

2. The medical device according to claim 1 wherein said implantable medical device is selected from the group consisting of a vascular stent, vascular grafts, endovascular support devices, and catheters.

3. The medical device according to claim 1 wherein said and at least one elongated polymer strand is woven through said openings longitudinally.

4. The medical device according to claim 1 wherein said and at least one elongated polymer strand is woven through said openings horizontally.

5. The medical device according to claim 1 wherein said and at least one elongated polymer strand comprises a biodegradable polymer.

6. The medical device according to claim 1 wherein said and at least one elongated polymer strand comprises a non-biodegradable polymer.

7. The medical device according to claim 1 wherein said and at least one elongated polymer strand comprises a biomolecule.

8. The medical device according to claim 5 wherein said biodegradable polymer is selected from the group consisting of poly(L-lactic acid), polycaprolactone, poly(lactide-co-glycolide), poly(ethylene-vinyl acetate), poly(hydroxybutyrate-co-valerate), polydioxanone, polyorthoester, polyanhydride, poly(glycolic acid), poly(D,L-lactic acid), poly(glycolic acid-co-trimethylene carbonate), polyphosphoester,

polyphosphoester urethane, poly(amino acids), cyanoacrylates, poly(trimethylene carbonate), poly(iminocarbonate), copoly(ether-esters) polyalkylene oxalates, polyphosphazenes and combinations thereof.

9. The medical device according to claim 6 wherein said non-biodegradable polymer is selected from the group consisting of polyurethanes, silicones, polyolefins, polyisobutylene and ethylene-alphaolefin copolymers; acrylic polymers and copolymers, ethylene-co-vinylacetate, polybutylmethacrylate, vinyl halide polymers and copolymers, polyvinyl ethers, polyvinyl methyl ether; polyvinylidene halides, polyacrylonitrile, polyvinyl ketones; polyvinyl aromatics, polyvinyl esters, copolymers of vinyl monomers, ethylene-methyl methacrylate copolymers, acrylonitrile-styrene copolymers, ABS resins, ethylene-vinyl acetate copolymers, polycarbonates, polyoxymethylenes, polyimides; polyethers, epoxy resins, polyurethanes, rayon, rayon-triacetate; cellulose, cellulose acetate, cellulose butyrate; cellulose acetate butyrate; cellophane; cellulose nitrate; cellulose propionate; cellulose ethers, and carboxymethyl cellulose, PTFE and combinations thereof.

10. The medical device according to claim 7 wherein said biomolecule is selected from the group consisting of fibrin, fibrinogen, cellulose, starch, collagen, hyaluronic acid and combinations thereof.

11. The medical device according to claim 1 wherein said therapeutic agent is selected from the group consisting of paclitaxel, docetaxel and derivatives, epothilones, nitric oxide release agents, heparin, aspirin, coumadin, D-phenylalanyl-prolyl-arginine chloromethylketone (PPACK), hirudin, polypeptide from angiostatin and endostatin, benzoquinone ansamycins including geldanamycin, herbimycin and macbecin, methotrexate, 5-fluorouracil, estradiol, P-selectin Glycoprotein ligand-1 chimera, abciximab, exochelin, eleutherobin and sarcodictyin, fludarabine, sirolimus, rapamycin, ABT-578, certican, Sulindac, tranilast, thiazolidinediones including rosiglitazone, troglitazone, pioglitazone, darglitazone and englitazone, tetracyclines, VEGF, transforming growth factor (TGF)-beta, insulin-like growth factor (IGF), platelet derived growth factor (PDGF), fibroblast growth factor (FGF), RGD peptide, estrogens, 17 beta-

estradiol, metalloprotease inhibitors, beta or gamma ray emitter (radioactive) agents and combinations thereof.

12. The medical device according to claim 2 wherein said stent is crimped onto a balloon.

13. The medical device according to claim 2 wherein said stent is self expanding.

14. A method for providing a therapeutic agent to tissue in need thereof comprising:

providing an implantable medical device comprising:

a thin-walled tubular member having a plurality of openings and at least one elongated polymer strand woven through said openings wherein said elongated polymer strand has incorporated therein or thereon at least one therapeutic agent for release into said tissue;

deploying said implantable medical device to said tissue in need of a therapeutic agent.

15. The method according to claim 14 wherein said tissue in deploying step comprises a vessel lumen.

16. The method according to claim 14 wherein said implantable medical device in said providing step is a vascular stent.

17. A vascular stent comprising a thin-walled tubular member having a plurality of openings and at least one elongated polymer strand woven through said openings wherein said at least one elongated polymer strand has incorporated therein paclitaxel.

18. A vascular stent comprising a thin-walled tubular member having a plurality of openings and at least one elongated polymer strand woven through said

openings wherein said at least one elongated polymer strand has incorporated therein rapamycin.

19. A vascular stent comprising a thin-walled tubular member having a plurality of openings and at least one elongated polymer strand woven through said openings wherein said at least one elongated polymer strand has incorporated therein a tetrazole-containing immunosuppressant macrolide antibiotic.

20. The vascular stent according to any one of claims 17, 18 or 19 wherein said polymer is selected from the group consisting of biomolecules, biodegradable polymers and non-biodegradable polymers.

21. The vascular stent according to claim 20 wherein said biomolecule is selected from the group consisting of fibrin, fibrinogen, cellulose, starch, collagen, hyaluronic acid and combinations thereof.

22. The vascular stent according to claim 21 wherein said biomolecule is fibrin.

23. A vascular graft comprising a thin-walled tubular member having a plurality of openings and at least one elongated polymer strand woven through said openings wherein said at least one elongated polymer strand has incorporated therein a therapeutic selected from the group consisting of paclitaxel, rapamycin, ABT-578 and metalloprotease inhibitors.

24. An endovascular support device comprising a thin-walled tubular member having a plurality of openings and at least one elongated polymer strand woven through said openings wherein said at least one elongated polymer strand has incorporated therein a therapeutic selected from the group consisting of paclitaxel, rapamycin, ABT-578 and metalloprotease inhibitors.

25. An implantable medical device according to claim 1 or 14 where in said at least one elongated polymer strand forms a sheath surrounding at least a portion of said

external surface, wherein said sheath comprises a material impregnated with one or more drugs.

26. An implantable medical device according to claim 25 wherein said sheath is formed from an extruded polymer.